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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,992	02/20/2002	David J. Chaiko	051583-0260	6129

23524 7590 11/17/2003

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EXAMINER
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WYROZEBSKI LEE, KATARZYNA I

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

### Office Action Summary

Application No.

10/078,992

Applicant(s)

CHAIKO, DAVID J.

Examiner

Katarzyna Wyrozubski Lee

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.  
37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 0802. 6) ☐ Other:

*Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claim 7, 9, 13, 21, 26, 34, 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Use of term “type” in claims 7, 21 and 34 renders claims indefinite, as term “type” does not specifically define the invention of the above claims.

Claim 9 of the present invention recites that the hydrotrope loading is “less than about 15 wt %”. With respect to the above limitation term “less than about” renders claims indefinite since it is not clear if the amount of the hydrotrope is less than 15 wt % or about 15 wt %, especially when term about encompasses amounts slightly higher than 15 wt %.

Claims 13, 26 and 39 contain limitation of chemically modified waxes. Such limitation renders claim indefinite, since it is not clear as to what exactly is modification of the waxes and therefore what are the exact waxes utilized in the claims.

*Claim Objections*

3. Claims 3, 17 and 30 are objected to because of the following informalities: Above claims are missing “and” in the last line of each claim. Appropriate correction is required.

*Note*

Term derivative in claims 2, 16 and 29 is not rejected as indefinite as the definition of term “derivative” is further described in following claims 3, 17 and 30.

*Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 1714

5. Claims 1-9, 14-22, 27-35 are rejected under 35 U.S.C. 102(b) as being anticipated by CHAIKO (US 6,172,121).

The prior art of CHAIKO discloses process for making organoclays. In the example 8 the prior art of CHAIKO utilizes polyvinyl alcohol and polyethylene glycol wherein polyethylene glycols are known surfactants. The two components were added as a mixture or concurrently. Example 3 of the prior art of CHAIKO further teaches use of cetyl trimethyl ammonium bromide salt, which is also a surfactant.

In example 5, the clay composition comprises polyethylene glycol as a polymer and ammonium compounds as surfactants.

Examples of polyethylene glycol derivatives as disclosed in the prior art of CHAIKO include polyethylene glycol acrylate, polyethylene glycol diacrylate, polyethylene glycol bisphenol A, polyethylene glycol glycidyl ether and the like (col. 5, line 60-col. 6, line 7). The polymeric components also include PEG/PPG copolymers, PEG/PPG/PEG polymers and the like (col. 5, lines 45-55).

Example 7 of the prior art of CHAIKO further discloses, that the polymeric component, such as PVP is utilized in an amount of 2 wt %. Polyvinyl alcohol in Example 8 is utilized at 1 wt %. The measurements as based on the weight of clay as they have to form a monolayer coating on the surface of the clay.

6. Claims 1, 2, 5-9, 14, 15, 19-22, 27-29, 32-35 are rejected under 35 U.S.C. 102(e) as being anticipated by ROSS (US 6,380,295).

The prior art of ROSS discloses clay/organic chemical composition for use with polymer plastic and resin matrix.

The prior art of ROSS discloses clay component that is modified with ammonium compound and another non-ionic polymeric material that intercalates between clay platelets.

Non-ionic polymeric material added with ammonium compound includes water responsive polymers such as PVP or polyvinyl alcohol as preferred embodiments (col. 8, lines 25-35). Example 7 discloses use of polyethylene glycol (col. 11, Table I).

In the process as disclosed in the example of the prior art of ROSS, clay is dispersed in aqueous slurry to which non-ionic polymer and ammonium compounds are added (Example I). Quaternary ammonium compound and non-ionic polymer can be added to the clay dispersion stepwise or simultaneously (col. 8, lines 56-60).

The ratio of component c, which is non-ionic polymer to clay is in a range of 15:100 to 5:100 (col. 9, lines 1-5). Therefore if the clay loading according to ROSS is in a range of 1-80 wt % (col. 8, lines 38-42), then the amount of polymeric component is in a range of 0.06 - 15 wt %.

In the light of the above disclosure, the prior art of ROSS anticipates the requirements of claims rejected above.

*Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 10-13, 23-26, 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over CHAIKO (US 6,172,121) or ROSS (US 6,380,295) either one of which in view of FERRARO (US 5,837,763).

The discussion of the disclosure of the prior art of CHAIKO or ROSS from paragraphs 5 or 6 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of CHAIKO or ROSS is presence of wax and its amounts.

With respect to the above difference, the prior art of FERRARO discloses composites of organophilic clay modified with polymeric compound such as PVP or PVA and wax. The

composite is prepared in aqueous dispersion where polymer and wax together intercalate themselves between the clay platelets, i.e., it swells the clay.

The waxes include natural and synthetic waxes such as montan wax, paraffin wax, sugar cane wax, chlorinated paraffin wax, polymeric waxes such as those made from polyethylene (col. 14, lines 9-25).

Addition of wax into platelet composites reduces separation of components upon standing and solidification (col. 16, lines 53-55),

Waxes have been shown by the prior art of FERRARO as compounds capable of intercalation in between the clay platelets and at the same time reducing the separation between the components of the composition. Use of those compounds in conjunction with other intercalants in amounts effective to achieve intercalation would have been obvious to one having ordinary skill in the art.

In the light of the above disclosure it would have been obvious to one having ordinary skill in the art at the time of the instant invention to add wax to the prior art of either CHAIKO or ROSS and thereby obtain the claimed invention. Addition of wax would result in swelled or intercalated composition having reduced tendency to separation upon standing and solidification. In addition, the combination of two known compositions is expected to work in additive or cumulative manner. *In re Kerkhoven* 626 E.2d 846, 850 205 USPQ 1069, 1072 (CCPA 1980)

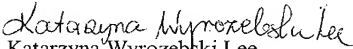


Art Unit: 1714

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski Lee whose telephone number is (703) 306-5875. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Katarzyna Wyrozebski Lee  
Primary Examiner  
Art Unit 1714

November 10, 2003